Name:

at1113exam: Expand, factor, and solve quadratics (v310)

1. Expand the following expression into standard form.

$$(9x + 2)^2$$

$81x^2 + 18x + 18x + 4$

$81x^2 + 36x + 4$

2. Solve the equation.

$$(6x + 5)(3x - 8) \;=\; 0$$

$x = \dfrac{-5}{6}$ $\qquad$ $x = \dfrac{8}{3}$

3. Expand the following expression into standard form.

$$(2x - 9)(5x + 7)$$

$10x^2 + 14x - 45x - 63$

$10x^2 - 31x - 63$

4. Expand the following expression into standard form.

$$(7x + 5)(7x - 5)$$

$49x^2 - 35x + 35x - 25$

$49x^2 - 25$

5. Solve the equation with factoring by grouping.

$$12x^2 + 18x + 10x + 15 \;=\; 0$$

$$(6x + 5)(2x + 3) = 0$$

$$x = \frac{-5}{6} \qquad x = \frac{-3}{2}$$

6. Solve the equation.

$$7x^2 + 21x + 33 \;=\; 4x^2 - 2x + 3$$

$$3x^2 + 23x + 30 = 0$$

$$(3x + 5)(x + 6) = 0$$

$$x = \frac{-5}{3} \qquad x = -6$$

7. Factor the expression.

$$x^2 + 3x - 40$$

$$(x + 8)(x - 5)$$

8. Factor the expression.

$$64x^2 - 9$$

$$(8x + 3)(8x - 3)$$